4.10 ENERGY AND MINERALS

This subsection describes energy and mineral resources such as oil, natural gas, sand and gravel, and electricity in the proposed Project vicinity and evaluates any impacts the Project and its alternatives may have on these resources. Related information on natural gas is provided in Section 1.2, "Project Purpose, Need, and Objectives."

4.10.1 Environmental Setting

4.10.1.1 California Natural Gas Plan

The State of California currently uses 265,000 gigawatt-hours of electricity per year, with electricity consumption growing 2 percent annually. Since the 1990s, between 29 percent and 42 percent of California's in-state generation used natural gas. The State uses 2 trillion cubic feet (56.64 billion cubic meters [m^3]) of natural gas per year (State of California Consumer Power and Conservation Financing Authority, Energy Resources Conservation and Development Commission, Public Utilities Commission. 2003).

To offset some of the natural gas demand, the State of California is increasing its energy conservation programs, will retire less efficient power plants, and is diversifying its fuel mix by accelerating the Renewables Portfolio Standard (RPS). However, the State's Energy Action Plan recognizes that the need for natural gas cannot be eliminated and has included within it provisions to ensure a reliable supply of reasonably priced natural gas.

The following paragraphs describe the contribution of energy conservation measures and renewable energy supplies to current and projected energy resources.

Energy Conservation

The State of California is decreasing its per capita use of electricity through increased energy conservation and efficiency measures. Specific actions outlined in the 2003 Energy Action Plan that the State is implementing include the following:

1. Implementing a voluntary dynamic pricing system to reduce peak demand by as much as 1,500 to 2,000 megawatts (MW) by 2007;
2. Improving new and remodeled building efficiency by 5 percent;
3. Improving air conditioner efficiency by 10 percent above federally mandated standards;
4. Making every new state building a model of energy efficiency;
5. Creating customer incentives for aggressive energy demand reduction;
6. Providing utilities with demand response and energy efficiency investment rewards comparable to the return on investment in new power and transmission projects;

7. Increasing local government conservation and energy efficiency programs;
8. Incorporating, as appropriate per Public Resources Code section 25402, distributed generation or renewable technologies into energy efficiency standards for new building construction; and
9. Encouraging companies that invest in energy conservation and resource efficiency to register with the State's Climate Change Registry.

These measures, individually or collectively, are anticipated to only partially offset the need for new power generation (see Section 3.3.1, "Energy Conservation" for further discussion of this issue). According to the State of California's May 8, 2003 Energy Action Plan, additional reliable natural gas supply options are needed in addition to other measures specifically outlined in the Plan. Furthermore, taking into account the increased conservation measures, natural gas demand will have an approximately 1 percent annual growth rate from 2003 to 2013 according to the California Energy Commission (CEC) (Gopal 2003).

Renewable Energy Sources

As of 2003, electricity from renewable sources (such as wind, geothermal, and hydropower) met 12 percent of the State's total demand. The State's objective is to generate 20 percent of its electricity from renewables by 2017 and aims to accelerate the completion date to 2010, according to the 2003 Energy Action Plan and CEC's March 2004 Public Interest Energy Research 2003 Annual Report. Also, according to the 2003 Energy Action Plan, the State of California will:

1. Add a net average of up to 600 MW of new renewable generation sources annually to the investor-owned utility resource portfolio.
2. Establish by June 30, 2003, key RPS implementation rules, including market price benchmarks, standard contract terms, flexible compliance and penalty mechanisms, and bid ranking criteria under the "least cost-best fit" rubric. Other key RPS rules will be developed and refined throughout 2003.
3. Facilitate an orderly and cost-effective expansion of the transmission system to connect potential renewable resources to load.
4. Initiate the development of RPS compliance rules for energy service providers and community choice aggregators.
5. Coordinate implementation with all relevant state agencies and with municipal utilities to facilitate their achievement of the standard.

Most renewable energy sources are designed to generate electricity, yet natural gas also is used extensively for a variety of commercial and residential end users such as heating, ventilation, and air conditioning, and chemical processes. As such, an expansion in the use of renewable energy in the electrical generation industry may not be an adequate substitute to meet the current natural gas demand for many end users (see Section 3.3.2, "Renewable Energy Sources" for further discussion of this issue).

The CEC projects a 1 percent annual increase in demand for natural gas, despite its forecast of increased supply from renewable sources under existing policies and programs. Thus, even taking into account current forecasts of renewable sources, the need for a significant increase in the natural gas supply exists.

4.10.1.2 Energy Resources

The Project would not significantly affect peak and base period demands for electricity and other forms of energy. During construction, a small amount of electricity would be required for the onshore field office, and construction equipment and generators would require petroleum-based fuel, but not at any noticeable level relative to existing consumption in the Project area. The floating storage and regasification unit (FSRU) will generate electricity to meet the Project's operational needs.

Oil and Gas Resources

California has a permanent moratorium on new offshore oil and gas leasing in State waters as well as a moratorium on leasing in Federal waters until 2008. However, development may occur within offshore areas leased before the moratoriums.

Offshore (Proposed FSRU/Subsea Pipelines)

Platform Gina and the Hueneme Field are located approximately 4.8 nautical miles (NM) (5.5 miles or 8.9 kilometers [km]) west of the closest part of the proposed offshore pipeline. Product from Platform Gina is sent by pipeline to the Mandalay Onshore Separation Facility.

Onshore (Proposed Center Road Pipeline area)

The City of Oxnard has four oil and gas fields within its sphere of influence: the West Montalvo Field, El Rio Field, Santa Clara Avenue Field, and Oxnard Field (City of Oxnard 1990). The West Montalvo Field and El Rio Field are west of the Center Road Pipeline and its alternatives. The Santa Clara Avenue Field is mainly north of United States (U.S.) Highway 101 (Ventura Freeway) and lies between the proposed Center Road Pipeline and Center Road Pipeline Alternative 1 routes.

The proposed Center Road Pipeline route traverses the Oxnard Field, which is directly west of the Camarillo Airport and south of U.S. Highway 101 (Ventura Freeway). There are approximately 290 wells in the Oxnard Field.

Onshore (Proposed Line 225 Pipeline Loop area)

There are several active oil and gas recovery operations in the vicinity of the proposed Line 225 Pipeline Loop such as those in Placerita Canyon and near the town of Castaic. All of the active oil and gas drilling and production operations would be approximately 2 miles (3.3 km) or farther from the Line 225 Pipeline Loop at any given point, except for the Quigley Valve Station area, which is located in an oil field.

4.10.1.3 Mineral Resources

Aggregate Resources

The California State Mining and Geology Board classifies California mineral resources with the Mineral Resource Zones (MRZs) system. These zones have been established based on the presence or absence of significant sand and gravel deposits and crushed rock source areas, e.g., products used in the production of cement. The guidelines for establishing the MRZs are as follows:

- MRZ-1—Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that there is little likelihood for their presence;
- MRZ-2—Areas where adequate information indicates that significant mineral deposits are present or where it is judged that there is a high likelihood for their presence;
- MRZ-3—Areas containing mineral deposits, the significance of which cannot be evaluated from available data; and
- MRZ-4—Areas where available information is inadequate for assignment to any other MRZ.

Center Road Pipeline

The proposed Center Road Pipeline route traverses MRZ-1 and MRZ-4 areas. There are no MRZ-2 or MRZ-3 areas.

Line 225 Pipeline Loop

There are several types of mineral resources found in the City of Santa Clarita, where the proposed Line 225 Pipeline Loop would be constructed. Gold mining has been the principal mineral extraction activity in the area, and other minerals include titanium and tuff. Mapping of aggregate resources is not currently available.

4.10.2 Regulatory Setting

Major Federal, State, and local laws and regulations related to energy and minerals are identified in Table 4.10-1.

Table 4.10-1 Major Laws, Regulatory Requirements, and Plans for Energy and Minerals

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
State	
Warren-Alquist Act, Public Resources Code —Division 15, "Energy Conservation and Development" (Section 25410 et seq.) *- State Energy Resources Conservation and Development Commission*	• The State of California adopted the Warren-Alquist Act in an effort to encourage conservation of non-renewable energy resources, and the State Energy Resources Conservation and Development Commission was created as a result.
State Surface Mining and Reclamation Act (SMARA) of 1975	• The SMARA serves to ensure the proper reclamation of surface mining operations and to safeguard access to mineral resources of regional and statewide significance in the face of competing land uses and urban expansion.
The California Coastal Act (CCA) of 1976 (Public Resources Code Section 30000 et seq). *- California Coastal Commission (CCC*).	• Adopted to protect and enhance Coastal Zone resources, to ensure balanced utilization of those resources, and to maximize access to the shoreline. • The project will require submittal of a consistency certification to the California Coastal Commission. Articles 2 through 7 of the Act address coastal consistency requirements.
Local	
Ventura County Mineral Resources Management Program *- Ventura County*	• Goal 1—Mineral lands classified MRZ-2 or designated as areas of statewide or regional significance should be protected from preclusive and incompatible land uses so that the mineral resources of these lands and areas are available when needed. • Goal 2—Surface mining within these classified lands and designated areas should be controlled to ensure that: – Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition that is readily adaptable for alternative land uses; and – The production and conservation of minerals are encouraged while giving consideration to recreation, watershed, wildlife, range and forage, aesthetic enjoyment, and other environmental factors and residual hazards to public health and safety are eliminated. • Compatible land uses for MRZ-2 areas include the following: (1) very low-density residential (0.1 units/acre), (2) extensive industrial, (3) recreation/open space, and (4) agriculture.
The City of Oxnard 2020 General Plan *- City of Oxnard*	• The 2020 General Plan (City of Oxnard 1990) provides guidance for mineral (e.g., sand and gravel) and oil and gas resources. Pertinent information referenced in the City of Oxnard's 2020 General Plan is presented in Subsection 4.10.1, "Environmental Setting." • Land use activities where MRZ-2 areas exist should not preclude mineral extraction opportunities.

4.10.3 Significance Criteria

Impacts on energy and mineral resources from the construction or operation of the Project are considered significant if the Project:

- Causes a loss in availability of a known aggregate or oil/gas resource that would be of value to the region and the residents of the State;
- Prevents mineral resource extraction opportunities;
- Conflicts with adopted energy conservation plans;
- Results in the need for new or substantially altered power or natural gas utility systems;
- Creates any significant effects on local or regional energy supplies;
- Creates any significant effects on peak and base period demands for electricity and other forms of energy; and
- Does not comply with existing energy standards.

4.10.4 Impact Analysis and Mitigation

Potential impacts and mitigation measures proposed for impacts on energy resources are discussed below. A summary of potential impacts on energy resources and the proposed mitigation measures is provided in Table 4.10-2. Applicant-proposed mitigation measures (AMM) and agency-recommended mitigation measures (MM) are defined in Section 4.1.

Table 4.10-2 Summary of Energy Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
ENE-1: The Project may temporarily limit access to or availability of mineral resources such as sand/gravel and oil/gas production (Class III).	None.

Impact ENE-1: Access to Mineral Resources

The Project may temporarily limit access to or availability of mineral resources such as sand/gravel and oil/gas production (Class III).

The Project would be unlikely to have any long-term or significant impacts on mineral resource extraction opportunities because it would not cross any active quarries and would not affect oil or gas production. The proposed pipeline routes would generally be located within existing rights-of-way (ROWs). Offshore, a moratorium on oil and gas drilling is in effect and if were it to be lifted the availability of directional drilling techniques would allow exploitation of resources if determined to be feasible. Following construction, Project areas would return to baseline conditions.

Mitigation Measure for Impact ENE-1: Access to Mineral Resources

This impact is less than significant and no mitigation measures are identified.

4.10.5 Alternatives

4.10.5.1 No Action Alternative

The No-Action alternative means that the Project would not go forward and the FSRU, associated subsea pipelines, onshore odorization facility, and onshore pipelines would not be installed. In that case, the energy needs identified in Section 1.3 would likely be addressed through other means, e.g., other energy-related projects, implementation of additional energy conservation measures, or through economic measures (increased pricing) to reduce energy consumption. Energy conservation measures and renewable energy supplies already are being implemented and already considered in the existing energy needs for California (see Subsection 4.10.1). Any means of increasing energy supplies or decreasing energy consumption could result in lesser or greater environmental impacts than the proposed Project but cannot be predicted with any certainty at this time.

This No Action alternative would eliminate any potential Project impacts on energy and mineral resources.

4.10.5.2 Alternative Deepwater Port Location—Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline

The Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline alternative mooring location would be located 3.5 to 4.3 NM (4 to 5 miles, or 6.4 to 8.0 km) from Platforms Grace and Habitat. Platform Grace is not currently producing oil or gas. Because the wells from the platforms are directionally drilled and distant from the small footprint of the Project, it is not anticipated that the Project would restrict access to offshore oil and gas production. Impacts from this alternative would be similar to those from the proposed Project location.

4.10.5.3 Alternative Onshore Pipeline Routes

Center Road Pipeline Alternative 1

Siting of the Center Road Pipeline alternative routes would effect resource extraction opportunities similar to those from the proposed route. Alternative 1 would cross 5 miles (8.0 km) of MRZ-2, from Milepost (MP) 7.0 to MP 12.0, which the other routes would not. However, because the route would be generally contained in existing ROWs, no adverse effects would be anticipated. The remainder of Alternative 1 would traverse MRZ-1 and MRZ-4 areas. These impacts are not significant and mitigation is not proposed.

Center Road Pipeline Alternative 2

Alternative 2 would traverse MRZ-1 and MRZ-4 areas. These impacts are not significant and mitigation is not proposed.

Line 225 Pipeline Loop Alternative

Impacts from this alternative would be similar to those from the proposed route. These impacts are not significant and mitigation is not proposed.

4.10.5.4 Alternative Shore Crossings and Pipeline Connection Routes

Point Mugu Shore Crossing/Casper Road Pipeline

The energy impacts from the Point Mugu Shore Crossing/Casper Road Pipeline would be similar to those from the proposed Project. These impacts are not significant and mitigation is not proposed.

Arnold Road Shore Crossing/Arnold Road Pipeline

The energy impacts from the Arnold Road Shore Crossing/Arnold Road Pipeline alternative would be approximately the same as those from the proposed Project. These impacts are not significant and mitigation is not proposed.

4.10.6 References

City of Oxnard. 1990. City of Oxnard 2020 General Plan. November. Includes Amendments through December 2000.

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